04 CO (handwritten)

#4 OIPE (handwritten)

P.5 (handwritten)

ENTERED

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        RAW SEQUENCE LISTING              DATE: 11/09/2000
        PATENT APPLICATION:  US/09/695,451     TIME: 11:54:56

        Input Set : A:\PTO.txt
        Output Set: N:\CRF3\11092000\I695451.raw

   3 <110> APPLICANT: Brenda F. Baker
   4        Lex M. Cowsert
   5        Hong Zhang
   6        Nicholas M. Dean
   8 <120> TITLE OF INVENTION: ANTISENSE MODULATION OF TNFR1 EXPRESSION
  10 <130> FILE REFERENCE: ISPH-0518
C-->  12 <140> CURRENT APPLICATION NUMBER: US/09/695,451
C-->  12 <141> CURRENT FILING DATE: 2000-10-24
  12 <150> PRIOR APPLICATION NUMBER: US 09/106,038
  13 <151> PRIOR FILING DATE: 1998-06-26
  15 <150> PRIOR APPLICATION NUMBER: PCT/US99/13763
  16 <151> PRIOR FILING DATE: 1999-06-17
  18 <160> NUMBER OF SEQ ID NOS: 246
  20 <170> SOFTWARE: FastSEQ for Windows Version 4.0
  22 <210> SEQ ID NO: 1
  23 <211> LENGTH: 2161
  24 <212> TYPE: DNA
  25 <213> ORGANISM: Homo sapiens
  27 <220> FEATURE:
  28 <221> NAME/KEY: CDS
  29 <222> LOCATION: (256)...(1623)
  31 <400> SEQUENCE: 1
  32    cggcccagtg atcttgaacc ccaaaggcca gaactggagc ctcagtccag agaattctga 60
  33    gaaaattaaa gcagagagga ggggagagat cactgggacc aggccgtgat ctctatgccc 120
  34    gagtctcaac cctcaactgt caccccaagg cacttgggac gtcctggaca gaccgagtcc 180
  35    cgggaagccc cagcactgcc gctgccacac tgccctgagc ccaaatgggg gagtgagagg 240
  36    ccatagctgt ctggc atg ggc ctc tcc acc gtg cct gac ctg ctg ctg ccg 291
  37                    Met Gly Leu Ser Thr Val Pro Asp Leu Leu Leu Pro
  38                     1               5                  10
  40    ctg gtg ctc ctg gag ctg ttg gtg gga ata tac ccc tca ggg gtt att 339
  41    Leu Val Leu Leu Glu Leu Leu Val Gly Ile Tyr Pro Ser Gly Val Ile
  42               15                  20                  25
  44    gga ctg gtc cct cac cta ggg gac agg gag aag aga gat agt gtg tgt 387
  45    Gly Leu Val Pro His Leu Gly Asp Arg Glu Lys Arg Asp Ser Val Cys
  46            30                  35                  40
  48    ccc caa gga aaa tat atc cac cct caa aat aat tcg att tgc tgt acc 435
  49    Pro Gln Gly Lys Tyr Ile His Pro Gln Asn Asn Ser Ile Cys Cys Thr
  50        45                  50                  55                  60
  52    aag tgc cac aaa gga acc tac ttg tac aat gac tgt cca ggc ccg ggg 483
  53    Lys Cys His Lys Gly Thr Tyr Leu Tyr Asn Asp Cys Pro Gly Pro Gly
  54                65                  70                  75
  56    cag gat acg gac tgc agg gag tgt gag agc ggc tcc ttc acc gct tca 531
  57    Gln Asp Thr Asp Cys Arg Glu Cys Glu Ser Gly Ser Phe Thr Ala Ser
  58                80                  85                  90
  60    gaa aac cac ctc aga cac tgc ctc agc tgc tcc aaa tgc cga aag gaa 579
  61    Glu Asn His Leu Arg His Cys Leu Ser Cys Ser Lys Cys Arg Lys Glu
  62               95                  100                 105
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```
64    atg ggt cag gtg gag atc tct tct tgc aca gtg gac cgg gac acc gtg    627
65    Met Gly Gln Val Glu Ile Ser Ser Cys Thr Val Asp Arg Asp Thr Val
66        110                 115                 120
68    tgt ggc tgc agg aag aac cag tac cgg cat tat tgg agt gaa aac ctt    675
69    Cys Gly Cys Arg Lys Asn Gln Tyr Arg His Tyr Trp Ser Glu Asn Leu
70    125             130                 135                 140
72    ttc cag tgc ttc aat tgc agc ctc tgc ctc aat ggg acc gtg cac ctc    723
73    Phe Gln Cys Phe Asn Cys Ser Leu Cys Leu Asn Gly Thr Val His Leu
74                145                 150                 155
76    tcc tgc cag gag aaa cag aac acc gtg tgc acc tgc cat gca ggt ttc    771
77    Ser Cys Gln Glu Lys Gln Asn Thr Val Cys Thr Cys His Ala Gly Phe
78                160                 165                 170
80    ttt cta aga gaa aac gag tgt gtc tcc tgt agt aac tgt aag aaa agc    819
81    Phe Leu Arg Glu Asn Glu Cys Val Ser Cys Ser Asn Cys Lys Lys Ser
82            175                 180                 185
84    ctg gag tgc acg aag ttg tgc cta ccc cag att gag aat gtt aag ggc    867
85    Leu Glu Cys Thr Lys Leu Cys Leu Pro Gln Ile Glu Asn Val Lys Gly
86        190                 195                 200
88    act gag gac tca ggc acc aca gtg ctg ttg ccc ctg gtc att ttc ttt    915
89    Thr Glu Asp Ser Gly Thr Thr Val Leu Leu Pro Leu Val Ile Phe Phe
90    205             210                 215                 220
92    ggt ctt tgc ctt tta tcc ctc ctc ttc att ggt tta atg tat cgc tac    963
93    Gly Leu Cys Leu Leu Ser Leu Leu Phe Ile Gly Leu Met Tyr Arg Tyr
94                225                 230                 235
96    caa cgg tgg aag tcc aag ctc tac tcc att gtt tgt ggg aaa tcg aca    1011
97    Gln Arg Trp Lys Ser Lys Leu Tyr Ser Ile Val Cys Gly Lys Ser Thr
98                240                 245                 250
100   cct gaa aaa gag ggg gag ctt gaa gga act act act aag ccc ctg gcc    1059
101   Pro Glu Lys Glu Gly Glu Leu Glu Gly Thr Thr Thr Lys Pro Leu Ala
102           255                 260                 265
104   cca aac cca agc ttc agt ccc act cca ggc ttc acc ccc acc ctg ggc    1107
105   Pro Asn Pro Ser Phe Ser Pro Thr Pro Gly Phe Thr Pro Thr Leu Gly
106       270                 275                 280
108   ttc agt ccc gtg ccc agt tcc acc ttc acc tcc agc tcc acc tat acc    1155
109   Phe Ser Pro Val Pro Ser Ser Thr Phe Thr Ser Ser Ser Thr Tyr Thr
110   285             290                 295                 300
112   ccc ggt gac tgt ccc aac ttt gcg gct ccc cgc aga gag gtg gca cca    1203
113   Pro Gly Asp Cys Pro Asn Phe Ala Ala Pro Arg Arg Glu Val Ala Pro
114               305                 310                 315
116   ccc tat cag ggg gct gac ccc atc ctt gcg aca gcc ctc gcc tcc gac    1251
117   Pro Tyr Gln Gly Ala Asp Pro Ile Leu Ala Thr Ala Leu Ala Ser Asp
118               320                 325                 330
120   ccc atc ccc aac ccc ctt cag aag tgg gag gac agc gcc cac aag cca    1299
121   Pro Ile Pro Asn Pro Leu Gln Lys Trp Glu Asp Ser Ala His Lys Pro
122           335                 340                 345
124   cag agc cta gac act gat gac ccc gcg acg ctg tac gcc gtg gtg gag    1347
125   Gln Ser Leu Asp Thr Asp Asp Pro Ala Thr Leu Tyr Ala Val Val Glu
126       350                 355                 360
128   aac gtg ccc ccg ttg cgc tgg aag gaa ttc gtg cgg cgc cta ggg ctg    1395
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                    RAW SEQUENCE LISTING              DATE: 11/09/2000
                    PATENT APPLICATION: US/09/695,451  TIME: 11:54:56

                    Input Set : A:\PTO.txt
                    Output Set: N:\CRF3\11092000\I695451.raw

129    Asn Val Pro Pro Leu Arg Trp Lys Glu Phe Val Arg Arg Leu Gly Leu
130    365                 370                 375                 380
132    agc gac cac gag atc gat cgg ctg gag ctg cag aac ggg cgc tgc ctg   1443
133    Ser Asp His Glu Ile Asp Arg Leu Glu Glu Leu Gln Asn Gly Arg Cys Leu
134                        385                 390                 395
136    cgc gag gcg caa tac agc atg ctg gcg acc tgg agg cgg cgc acg ccg   1491
137    Arg Glu Ala Gln Tyr Ser Met Leu Ala Thr Trp Arg Arg Arg Thr Pro
138                        400                 405                 410
140    cgg cgc gag gcc acg ctg gag ctg ctg gga cgc gtg ctc cgc gac atg   1539
141    Arg Arg Glu Ala Thr Leu Glu Leu Leu Gly Arg Val Leu Arg Asp Met
142                415                 420                 425
144    gac ctg ctg ggc tgc ctg gag gac atc gag gag gcg ctt tgc ggc ccc   1587
145    Asp Leu Leu Gly Cys Leu Glu Asp Ile Glu Glu Ala Leu Cys Gly Pro
146            430                 435                 440
148    gcc gcc ctc ccg ccc gcg ccc agt ctt ctc aga tga ggctgcgccc        1633
149    Ala Ala Leu Pro Pro Ala Pro Ser Leu Leu Arg  *
150    445                 450                 455
152    ctgcgggcag ctctaaggac cgtcctgcga gatcgccttc caacccact ttttctgga 1693
153    aaggagggt cctgcagggg caagcaggag ctagcagccg cctacttggt gctaaccct 1753
154    cgatgtacat agcttttctc agctgcctgc gcgccgccga cagtcagcgc tgtgcgcgcg 1813
155    gagagaggtg cgccgtgggc tcaagagcct gagtgggtgg tttgcgagga tgaggacgc 1873
156    tatgcctcat gcccgtttg ggtgtcctca ccagcaaggc tgctcggggg cccctggttc 1933
157    gtccctgagc cttttcaca gtgcataagc agttttttt gttttgttt tgttttgttt 1993
158    tgtttttaaa tcaatcatgt tacactaata gaaacttggc actcctgtgc cctctgcctg 2053
159    gacaagcaca tagcaagctg aactgtccta aggcaggggc gagcacggaa caatgggcc 2113
160    ttcagctgga gctgtggact tttgtacata cactaaaatt ctgaagtt              2161
162 <210> SEQ ID NO: 2
163 <211> LENGTH: 23
164 <212> TYPE: DNA
165 <213> ORGANISM: Artificial Sequence
167 <220> FEATURE:
168 <223> OTHER INFORMATION: PCR Primer
170 <400> SEQUENCE: 2
171    gcttcagaaa accacctcag aca                                         23
173 <210> SEQ ID NO: 3
174 <211> LENGTH: 19
175 <212> TYPE: DNA
176 <213> ORGANISM: Artificial Sequence
178 <220> FEATURE:
179 <223> OTHER INFORMATION: PCR Primer
181 <400> SEQUENCE: 3
182    ccggtccact gtgcaagaa                                              19
184 <210> SEQ ID NO: 4
185 <211> LENGTH: 24
186 <212> TYPE: DNA
187 <213> ORGANISM: Artificial Sequence
189 <220> FEATURE:
190 <223> OTHER INFORMATION: PCR Probe
192 <400> SEQUENCE: 4
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RAW SEQUENCE LISTING   DATE: 11/09/2000
PATENT APPLICATION: US/09/695,451   TIME: 11:54:56

Input Set : A:\PTO.txt
Output Set: N:\CRF3\11092000\I695451.raw

```
193    tcagctgctc caaatgccga aagg                          24
195 <210> SEQ ID NO: 5
196 <211> LENGTH: 19
197 <212> TYPE: DNA
198 <213> ORGANISM: Artificial Sequence
200 <220> FEATURE:                     \
201 <223> OTHER INFORMATION: PCR Primer
203 <400> SEQUENCE: 5
204    gaaggtgaag gtcggagtc                                19
206 <210> SEQ ID NO: 6
207 <211> LENGTH: 20
208 <212> TYPE: DNA
209 <213> ORGANISM: Artificial Sequence
211 <220> FEATURE:
212 <223> OTHER INFORMATION: PCR Primer
214 <400> SEQUENCE: 6
215    gaagatggtg atgggatttc                               20
217 <210> SEQ ID NO: 7
218 <211> LENGTH: 20
219 <212> TYPE: DNA
220 <213> ORGANISM: Artificial Sequence
222 <220> FEATURE:
223 <223> OTHER INFORMATION: PCR Probe
225 <400> SEQUENCE: 7
226    caagcttccc gttctcagcc                               20
228 <210> SEQ ID NO: 8
229 <211> LENGTH: 18
230 <212> TYPE: DNA
231 <213> ORGANISM: Artificial Sequence
233 <220> FEATURE:
234 <223> OTHER INFORMATION: Antisense Oligonucleotide
236 <400> SEQUENCE: 8
237    ttctctggac tgaggctc                                 18
239 <210> SEQ ID NO: 9
240 <211> LENGTH: 18
241 <212> TYPE: DNA
242 <213> ORGANISM: Artificial Sequence
244 <220> FEATURE:
245 <223> OTHER INFORMATION: Antisense Oligonucleotide
247 <400> SEQUENCE: 9
248    tcccctcctc tctgcttt                                 18
250 <210> SEQ ID NO: 10
251 <211> LENGTH: 18
252 <212> TYPE: DNA
253 <213> ORGANISM: Artificial Sequence
255 <220> FEATURE:
256 <223> OTHER INFORMATION: Antisense Oligonucleotide
258 <400> SEQUENCE: 10
259    agactcgggc atagagat                                 18
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RAW SEQUENCE LISTING   DATE: 11/09/2000
PATENT APPLICATION: US/09/695,451   TIME: 11:54:56

Input Set : A:\PTO.txt
Output Set: N:\CRF3\11092000\I695451.raw

```
261 <210> SEQ ID NO: 11
262 <211> LENGTH: 18
263 <212> TYPE: DNA
264 <213> ORGANISM: Artificial Sequence
266 <220> FEATURE:
267 <223> OTHER INFORMATION: Antisense Oligonucleotide
269 <400> SEQUENCE: 11
270    ggttgagact cgggcata                          18
272 <210> SEQ ID NO: 12
273 <211> LENGTH: 18
274 <212> TYPE: DNA
275 <213> ORGANISM: Artificial Sequence
277 <220> FEATURE:
278 <223> OTHER INFORMATION: Antisense Oligonucleotide
280 <400> SEQUENCE: 12
281    tgagggttga gactcggg                          18
283 <210> SEQ ID NO: 13
284 <211> LENGTH: 18
285 <212> TYPE: DNA
286 <213> ORGANISM: Artificial Sequence
288 <220> FEATURE:
289 <223> OTHER INFORMATION: Antisense Oligonucleotide
291 <400> SEQUENCE: 13
292    acagttgagg gttgagac                          18
294 <210> SEQ ID NO: 14
295 <211> LENGTH: 18
296 <212> TYPE: DNA
297 <213> ORGANISM: Artificial Sequence
299 <220> FEATURE:
300 <223> OTHER INFORMATION: Antisense Oligonucleotide
302 <400> SEQUENCE: 14
303    ggtgacagtt gagggttg                          18
305 <210> SEQ ID NO: 15
306 <211> LENGTH: 18
307 <212> TYPE: DNA
308 <213> ORGANISM: Artificial Sequence
310 <220> FEATURE:
311 <223> OTHER INFORMATION: Antisense Oligonucleotide
313 <400> SEQUENCE: 15
314    gcagtgtggc agcggcag                          18
316 <210> SEQ ID NO: 16
317 <211> LENGTH: 18
318 <212> TYPE: DNA
319 <213> ORGANISM: Artificial Sequence
321 <220> FEATURE:
322 <223> OTHER INFORMATION: Antisense Oligonucleotide
324 <400> SEQUENCE: 16
325    agggcagtgt ggcagcgg                          18
327 <210> SEQ ID NO: 17
```

Please Note:
**Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220> to
<223> fields of each sequence which presents at least one n or Xaa.**

VERIFICATION SUMMARY   DATE: 11/09/2000
PATENT APPLICATION: US/09/695,451   TIME: 11:54:57

Input Set : A:\PTO.txt
Output Set: N:\CRF3\11092000\I695451.raw

L:12 M:270 C: Current Application Number differs, Replaced Current Application No
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:1207 M:361 W: Invalid Split Codon, Sequence data for SEQ ID#: 92
L:1229 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:93
L:1229 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:93
L:1230 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:93
M:340 Repeated in SeqNo=93
L:1233 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:93
L:1234 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:93
L:1237 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:93